



UNITED NATIONS  
**ECONOMIC AND SOCIAL COUNCIL**

48598

Distr.  
 LIMITED  
 ST/ECA/STPA/DM2/5  
 19 October 1981  
 Original in ENGLISH

ECONOMIC COMMISSION FOR AFRICA  
 Second Meeting of Directors of Centres Participating  
 in the Statistical Training Programme for Africa (STPA)  
 Addis Ababa, 2-6 November 1981

TECHNICAL ASSISTANCE FOR STATISTICAL  
 TRAINING IN AFRICA

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Introduction:

1. This paper contains a discussion on a number of issues arising in the training of statistical personnel in developing countries in general, and an account of technical and financial assistance in the field of statistical training.

## A. ISSUES ARISING IN THE TRAINING OF STATISTICAL PERSONNEL

Training activities in the context of technical co-operation among developing countries

2. The United Nations regional commissions and the specialized agencies are making every attempt to include statistical training activities as part of their general effort to promote technical co-operation among developing countries (TCDC) actively. Technical co-operation among developing countries is achieved through activities such as exchanges among developing countries of statistical publications, especially those of a technical or methodological nature, the organization of country courses, observational training and international statistical meetings and conferences in developing countries. The Economic and Social Commission for Asia and the Pacific (ESCAP) is active in conducting such activities. A number of developing countries are hosting the Statistical Training Programme for Africa (STPA) centres and the user countries are providing fellowships for students to attend. The Food and Agriculture Organization of the United Nations (FAO) organizes National Demonstration Centres for Agricultural Census (NDC) in selected developing countries. A few participants from selected neighbouring countries are also invited to attend NDC so as to enable them to organize similar training for their staff on return to their countries. Most of the regional training activities of the World Health Organization (WHO) are organized in the context of TCDC. Some health statisticians who are awarded fellowships are trained in neighbouring countries.

Contributions of countries towards co-ordinating and strengthening the regional and national training centres which they use

3. Examples of national contributions are the fellowships which the user countries provide to students attending the STPA centres and direct contributions towards the cost of running the institutions. In addition, user countries are represented on advisory boards of statistical training centres. As regards WHO regional training centres, the host countries cover a considerable part of the financial requirements and provide many trainers. In the case of national training centres, the countries concerned bear almost all the costs and provide teaching staff, although some international help is occasionally required. Some countries bear the expenses of training their nationals abroad.

Type and amount of assistance rendered by non-United Nations Organizations to the national, subregional, regional, and other training facilities

4. A number of donor agencies, international as well as bilateral, are supporting or are willing to support the development and expansion of the individual training centres within the STPA. Among these are the European Community (EC), the Commonwealth Fund for Technical Co-operation (CFTC) and bilateral donors such as the Overseas Development Administration (ODA) in the United Kingdom of Great Britain and Northern Ireland, the Ministry of Coordination and the Institut National de la Statistique et des Etudes Economiques (INSEE) in France, the Government of the Federal Republic of Germany, the United States Agency for International Development (AID), and the Government of Sweden. There are also some examples of assistance by non-United Nations organizations to FAO. The United States Bureau of the Census organizes overall training courses in statistics, which include courses in agricultural statistics of direct interest to FAO. The Munich Centre for Advanced Training in Applied Statistics for Developing Countries and the University of Kent in the United Kingdom have special training courses in agricultural statistics.

Extent to which practical needs are taken into account in the programmes of training institutions and possible need to lower academic entry requirements to attain this objective

5. Practical orientation of training programmes is emphasized by all regional commissions and specialized agencies, as well as by national, subregional and regional training institutions. A problem in many of the countries least-developed statistically is that of finding candidates who meet the admission requirements of the centres. It is desirable to maintain standards, but a too-rigid adherence to high academic entry requirements may adversely affect countries which are in great need of statistical personnel. There is need, therefore, for some flexibility in the selection of candidates from the countries least-developed statistically.

Country courses as a vehicle for professional training and extent to which certain national centres should be expanded to serve a subregion

6. In recent years, there has been considerable discussion concerning the degree to which regional training centres should give greater emphasis to country courses as a vehicle for professional training of a practical nature, concerning the appropriate distribution of course contents between regional and national training centres and concerning the extent to which certain national centres should be expanded to serve a subregion.

7. The ESCAP view is that there is considerable merit in providing for expansion of certain national centres to serve subregions. Courses provided by such institutions at the subregional level would probably be more relevant to the needs of the user countries, provided a minimum standard is maintained in the quality of training. This may also help in achieving greater homogeneity in the educational level and language of the participants which in turn should provide the participants with maximum benefit from the courses.

8. The WHO view is that regional training centres will be more cost-effective if they concentrate on teacher training. Teachers, thus trained will be able to enhance the quality of national training programmes.

Institutions responsible for training middle-level personnel and advice and assistance rendered by regional training centres to national training centres

9. The view generally held by the regional commissions and specialized agencies is that there is a need for closer co-operation between regional training centres and those national training centres that are catering exclusively to their own nationals. It is also felt that the training of middle-level statistical personnel should be the responsibility of national training centres. Regional training centres could provide assistance to national training centres by training the national trainers.

Extension of regional training facilities to include the training of systems analysts and programmers

10. Adequate training of technical personnel in data processing is still much needed in developing countries. It is expected that as countries acquire more computer equipment and related technology, their training needs will escalate over the next several years. Consequently, an added demand for introducing more automated data processing in the field of statistics can be expected.

11. Large-scale training needs cannot be met by a single institution in a region. For programmers, it could at best organize courses to train trainers so that local programmer training facilities can be established and promoted within the countries of the region. The regional commissions could supplement this activity by providing regional advisory services and clearing-house facilities for statistical software packages.

12. The problem of training systems analysts is much more complex. At present, most training is provided by the computer manufacturers in their parent offices and in their branches. A homogeneous regional training programme is difficult to envisage.

13. Since there are bound to be differentials in the growth of computer facilities in the developing countries of a region, another direction in which effort could usefully be made is to create facilities for training programmers at the subregional level, possibly through the TCDC arrangement with the subregional centres located wherever computer facilities are available.

14. Some international organizations hold the view that the training of systems analysts and programmers should be more related to, or even integrated with, that of statisticians in regional as well as national statistical training centres. To this end, regional training facilities should be increased.

### Training of trainers as a factor in the development of national training centres

15. With a significant increase in the statistical activities of the countries of a region, programmes for the training of trainers will be vital. In fields such as statistical methods, survey methodology and data processing, where a large number of persons would need to be trained, the need for developing countries to augment their training capabilities is the greatest. The trainers will in turn train thousands of enumerators and processing staff.

16. It is generally agreed that the training of trainers should be given high priority so that the trainers may stay abreast not only of the subject-matter but also of educational principles and techniques. The training should include study tours to well-known statistical training centres in other countries. This is indispensable for an adequate development of national training facilities.

### Desirability of regional training centres undertaking research projects

17. The ESCAP view is that the primary responsibility of regional training centres is training statistical personnel either directly or through the training of trainers. But some amount of job-oriented or associated research would be useful, such as evolving better teaching techniques, assembling and disseminating teaching materials which are of relevance to work, monitoring the rapidly changing computer and related technology, advising on the most suitable computer equipment and software for regional and country application and the like. Furthermore, undertaking research projects on specific topics and issues of interest to the countries of the region will enable the staff of the regional centre to familiarize themselves with the practical problems of the countries, thereby making the training programmes purposive and problem-oriented and enhancing the usefulness and prestige of the institutions.

18. The FAO view is that limited research projects should be undertaken by regional training centres for training and demonstration purposes only.

19. The WHO view is that to be involved in research projects does not necessarily improve the level of teaching at a training centre; it may even impede the training. What should be encouraged, however, is a continuous study of the functioning of the health statistical services, of problems and of users' needs for statistics. Information obtained from such a study will be essential for designing learning objectives for national as well as regional training.

### Drawing up guidelines for the academic and training needs of statisticians at different levels

20. The development of guidelines covering the academic and training needs of statisticians at different levels is highly desirable. As a start, efforts should be made at the country level to define and meet prevalent specific needs of the country. Guidelines on how to define such needs should then be prepared at the regional or even international level. However, consider the differences in basic educational standards, statistical experience, etc.,

obtaining in different countries of the developing world, more than one set of guidelines may be necessary at least at the subregional level.

#### Post-graduate programme at regional training institutes

21. It is generally felt that post-graduate programmes at regional training centres for short-term training in specialized fields should be organized, provided that the necessary specialization is available among the staff of the centre. The experience of the Statistical Institute for Asia and the Pacific, all of whose programmes are short-term (six months or less) and mostly at the post-graduate level, shows that such courses are regarded as extremely valuable by the participating countries.

#### Locating training institutions in universities

22. The location of regional training centres in universities will no doubt have the immediate benefit of providing a large faculty, a library and other facilities. However, this has disadvantages where university regulations limit admission of certain students and where universities tend to give too academic a bias to the courses. The advantages are that some exceptionally intelligent trainees of the centres may also eventually enrol for a degree at the university, which is more sought after than a diploma. However, since the training programmes of the regional centres need to have an applied orientation, suitable precautions need to be taken to ensure a healthy blend of both types of orientation.

#### Procedure for evaluating training programmes and following up trainees

23. The experience of the regional commissions, specialized agencies and training centres has been somewhat limited in this area. The Statistical Institute for Asia and the Pacific has endeavoured to evaluate its training programmes by a number of methods, including course evaluation by the present participants through confidential questionnaires and evaluation on questionnaires by previous participants and by their present superior officers. Though the information elicited in this way is a useful guide, it cannot be said that these methods have produced a significant evaluation of the programmes. Courses sponsored by WHO have been assessed mainly through an evaluation of student and teacher performance. Evaluation of the content of the teaching programme, that is, its relevance to the actual needs of students for a better performance of their job has been of rather recent date. However, more experience is needed from field-testing of assessment methods before any definitive recommendations can be formulated.

### B. TECHNICAL ASSISTANCE FOR STATISTICAL TRAINING

24. The Department of Technical Co-operation for Development executes the technical co-operation activities' programme to developing countries of the United Nations Organization. It delegates the technical advisory functions of its programme in statistics to the United Nations Statistical Office and in collaboration with concerned statistical division of each region, the United Nations Statistical Office carries out its function of technical support to the developing countries through its technical advisory staff at Headquarters and regional advisers in the regions.

25. There are full-time interregional advisers - one each in computer methods and demographic and social statistics. In addition, there is a short-term adviser in economic statistics in general and trade statistics in particular available up to December 1981. It is hoped that a full-time post of interregional adviser in statistical organization and economic statistics will be established from 1 January 1982.
26. These advisers are available to provide technical support in the various specialized areas to all developing countries irrespective of whether or not the developing country has an ongoing technical assistance project in statistics. They are available, therefore, to impart training to counterpart staff in their areas of competence in any developing country if a request is made to the Department of Technical Co-operation for Development through the local UNDP resident representative.
27. The United Nations Statistical Office operates an interregional project called Software Development Project. This project funded by UNFPA since 1977 provides computer software to help developing countries process population census and survey data. It has developed two packages UNEDIT and XTALLY.
28. The UNEDIT package facilitates identification of invalid and inconsistent data, and the XTALLY package produces a variety of multi-dimensional cross tabulations. Both packages are so easy to learn and use that statisticians, demographic analysts or other professional and technical staff as well as programmers, computer technical staff can learn and use them in a few hours time and become proficient in a matter of days. They have been installed on more than twenty different models of computers in some 28 developing countries, 10 of which are in Africa.
29. Support training for the software project has been provided in "hand-on" fashion for fellows from developing countries who have brought some of their own data to Headquarters in order to both learn the software packages and produce useful preliminary results from pilot censuses or surveys.
30. Fellows have come from five countries and special training arrangements have been made for others from five other countries.
31. Seminars and workshop sessions are regularly provided at the time of installing the software in developing countries. The software packages are installed at the Statistical Institute for Asia and the Pacific in Tokyo, where they are used in training courses for statisticians from developing countries in that region.
32. Training facilities may also be obtained under the technical assistance among developing countries scheme (TCDC). Under this scheme, the Department of Technical Co-operation for Developing earmarks certain funds under its regular programme budget to meet the cost of training fellows from developing countries in developing countries.

33. A certain amount of such funds is allocated to the Statistical Office to carry out a training programme in statistics. This is an apprenticeship type of training, and it is available for young statisticians from one developing country to train in a specialized statistical area in another developing country, preferably within the region, on attachment for a period of time. The details of the specialized programme is very flexible and the training programme may be developed by agreement among the United Nations Statistical Office and the two developing countries (the country of the statistician to be trained and where he will be trained). The important idea of the scheme is that it is an "apprenticeship attachment" and not a classroom course training or study tour.

34. Finally, training may also be obtained through country projects which are intended to develop or improve specific areas of statistics or develop local data processing capability. The United Nations Statistical Office always urges that every country project should include adequate opportunities for training the professional as well as middle-level staff of the concerned statistical office. Provisions for such training are included in the fellowship component of country projects. They are used to send professional statisticians abroad for specialized training or to meet local cost of training middle-level staff.

35. Training may also be done through in-service training programmes. At present, there are two countries - Zambia and Sierra Leone - which have such in-service training programmes that are part of their technical assistance project. Zambia's in-service training has been going on continuously for a number of years and consideration is now being given to begin discussions intended to transfer the programme to the university. Sierra Leone's in-service training programme has just been introduced. It provides technical academic knowledge to upper-grade middle-level staff to take the preliminary examination of the Associateship of the Institute of Statistician in London as well as provides academic and practical training to other middle-level staff in specialized statistical areas.

36. In addition, certain other countries and states (within countries) link the training of their staff - professional staff through workshop and seminar and middle-level staff through structured academic courses - to one of their universities or as in the case of Borno State to the Ramat Polytechnic at Maiduguri.